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QUARTERLY REPORT #3

II
June 8, 1978

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7.8-10140
CR-157174
APPLICATIONS OF HCM DATA

TO

SOIL MOISTURE SNOW

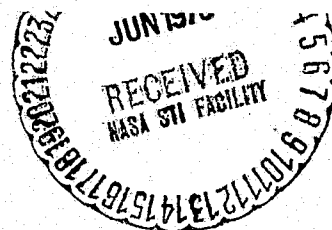
AND

ESTUARINE CURRENT STUDIES

(E78-10140) APPLICATIONS OF HCM DATA TO
SOIL MOISTURE SNOW AND ESTUARINE CURRENT
STUDIES Quarterly Report (National Oceanic
and Atmospheric Administration) 5 p HC
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P.O. #S-40229B

A. Problems

The May 22, 1978 RB-57 HCMR overflight over the Luverne, Minnesota test site was not flown due to inclement weather. Cloudy conditions were responsible for no ground data being collected for the May 29th morning HCMM satellite overpass and the May 25th morning and afternoon HCMM satellite overpass.

B. Accomplishments

Radiometer (0.4-1.5 μ m) and air temperature data were obtained on April 26, 1978 for the Cranberry Lake, New York test site to coincide with the RB-57 HCMR overflight which took place the same day. The ground data will be sent shortly from SUNY to NESS/ESG. Soil moisture and soil temperatures from eight sample points were obtained in Luverne to coincide with the afternoon HCMM satellite overpass of May 20, 1978. Meteorological data from the first-order station at Sioux Falls, South Dakota, 30 miles away was also obtained. A summary of the May 20th field data report is attached as Appendix A.

C. Significant results

None

D. Publications

None

E. Recommendations

None

F. Funds expended to date

Balance of funds	\$2.9K
Spent this period	<u>1.3K</u>
Funds remaining	\$1.6K

G. Data utility

The readout program for the HCMR aircraft tapes is still being worked on. No new aircraft or satellite data is available yet for study.

APPENDIX A

Summary of the May 20, 1977 Field Data Report Luverne, Minnesota

The purpose of the May 20, 1977 Luverne experiment was to collect soil moisture and soil temperature data coincidental with the early morning and afternoon HCMM satellite overpass. The field party was to consist of four persons, two from the NOAA/NESS and two from the SCS at Marshall, Minnesota. Due to morning cloudiness and the NWS forecast that the cloudiness would persist into the early afternoon, the two SCS personnel were notified that they would not be required to assist in collecting ground data. The clouds, however, dissipated in the late morning and the two NESS personnel proceeded to the test site to collect ground data.

On the survey date (May 20th) a total of eight soil moisture samples were collected; eight pairs of soil temperatures at the surface and at a depth of 11.5 cm were taken at each sampling site. The location of the samples is shown in figure A-1. Table 1 lists the ground data obtained at each of the eight sites.

TABLE 1

Field ID #	% Soil Moisture	Soil Temp. (°C)		Air Temp (°C)	Field Description
		Surface	11.5 cm		
1E1	25.4	34.8	16.2	21.0	Bare Field
3D1	31.7	30.9	14.6	20.7	Bare Field
3E1	24.2	26.7	15.2	23.0	Bare Field
3W2	23.3	33.2	14.9	19.0	Bare Field
Wea. Station	19.7	27.5	16.0	18.0	Bare Field
6E1	25.0	33.9	17.9	25.6	Bare Field
6W1	24.3	35.2	16.3	24.8	Bare Field
7D1	20.1	35.2	16.0	23.0	Bare Field

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